AMENDMENTS TO THE CLAIMS

(IN FORMAT COMPLIANT WITH THE REVISED 37 CFR 1.121)

1. (CURRENTLY AMENDED) A crosspoint switch comprising:

a plurality of input buses, input signals on the input buses being driven at a low swing;

a plurality of output buses, output signals on the output buses being driven at the low swing; and

a plurality of crosspoints, each comprising (i) a decoder configured to generate a first clock signal ~~an amplifier~~ and (ii) a repeater for selectively ~~passing a signal from a low swing input bus to a low swing output bus~~ generating a respective one of the output signals in response to both a respective one of the input signals and the first clock signal.

2. (CANCELED)

3. (CURRENTLY AMENDED) ~~A~~ The crosspoint switch as claimed in claim ~~3~~ 1, wherein each ~~crosspoint~~ repeater comprises:

an amplifier configured to generate an intermediate signal in response to both the respective input signal and the first clock signal; and

a low swing driver circuit configured to generate the respective output signal in response to the intermediate signal.

4. (CURRENTLY AMENDED) ~~A~~ The crosspoint switch as claimed in claim 3, wherein the amplifier is a clocked regenerative amplifier having a gain using a positive feedback.

5. (CURRENTLY AMENDED) ~~A~~ The crosspoint switch as claimed in claim ~~4~~ 3, further comprising a timing circuit which controls timing of the crosspoint switch from a second clock signal, the timing circuit including a delay~~, the timing of~~ which tracks a timing ~~variations~~ variation in the low swing driver circuit.

6. (CURRENTLY AMENDED) ~~A~~ The crosspoint switch as claimed in claim ~~3~~ 1, wherein the input signals on the input buses and the output signals on the output buses are differential signals.

7. (CURRENTLY AMENDED) ~~A~~ The crosspoint switch as claimed in claim 6, further comprising: ~~wherein low swing~~

a plurality of input drivers which drive the input buses; and ~~the low swing~~

a plurality of output drivers ~~at the crosspoints~~ connected to the output buses, wherein the input drivers and the output drivers are push-pull driver circuits, each of which drives

a pair of differential lines, one line driven high while the other line is pulled low.

8. (CURRENTLY AMENDED) ~~A~~ The crosspoint switch as claimed in claim 1, further comprising a plurality of amplifiers which amplify the output signals on the output buses, the amplifiers being clocked regenerative amplifiers having a gain using a positive feedback.

9. (CURRENTLY AMENDED) ~~A~~ The crosspoint switch as claimed in claim 8, wherein the input signals on the input buses and the output signals on the output buses are differential signals.

10. (CURRENTLY AMENDED) A crosspoint switch comprising:

~~a plurality of input buses;~~

a plurality of low swing drivers which drive a plurality of input signals to ~~the~~ a plurality of input buses, each low swing driver driving a first pair of differential lines, one line driven high while the other line is pulled low;

a plurality of output buses carrying a plurality of output signals on a second pair of differential lines;

a plurality of precharge devices, each configured to precharge a respective one of the output buses to a mid-swing level by connecting the second pair of differential lines together; and

a plurality of crosspoints, each selectively ~~passing a signal from an input bus to an output bus~~ generating a respective one of a plurality of output signals in response to a respective one of the input signals, each crosspoint comprising (i) an amplifier which amplifies ~~a signal on an input bus~~ the respective input signal to generate an intermediate signal and (ii) a low swing driver which drives ~~a low swing~~ the respective output signal on ~~an output bus~~ one of the output buses in response to the intermediate signal~~, and~~

~~a plurality of output amplifiers which sense the signals on the output buses~~.

11. (CURRENTLY AMENDED) ~~A~~ The crosspoint switch as claimed in claim 10, further comprising a timing circuit which controls timing of the ~~crosspoint switch~~ precharge devices and the crosspoints from a clock, the timing circuit including a delay~~, the timing of~~ which tracks timing variations in the low swing driver circuit.

12. (CURRENTLY AMENDED) ~~A~~ The crosspoint switch as claimed in claim ~~11~~ 10, wherein the amplifier is a clocked regenerative amplifier comprising:

a first amplifier configured to generate a first half of the intermediate signal in response to both halves of the respective input signal; and

a second amplifier configured to generate a second half of the intermediate signal in response to both halves of the respective input signal.

13. (CURRENTLY AMENDED) A method of connecting signals from a plurality of input buses to a plurality of output buses comprising:

driving the signals unidirectionally on the input buses with a low swing;

at crosspoints between the input buses and output buses, (i) generating a plurality of intermediate signals by ~~sensing and~~ amplifying the signals on the input buses in response to a first clock signal and (ii) driving low swing signals on the output buses ~~at low swing~~ in response to the intermediate signals; and

generating a plurality of output signals by sensing the low swing signals on the output buses.

14. (CURRENTLY AMENDED) ~~A~~ The method as claimed in claim 13, wherein the signals are ~~sensed~~ amplified at the crosspoints by a clocked regenerative ~~amplifier~~ amplification having a gain using a positive feedback.

15. (CURRENTLY AMENDED) ~~A~~ The method as claimed in claim ~~14~~ 13, further comprising controlling timing of the crosspoint switch from a second clock signal such that data in the signals are driven onto the input buses on both edged of the second clock signal ~~through a timing circuit including a delay, the timing of which varies in a manner similar to timing variations in driver circuits which drive the signals~~.

16. (CURRENTLY AMENDED) ~~A~~ The method as claimed in claim 13, wherein the signals on the input buses and the low swing signals on the output buses are differential signals.

17. (CURRENTLY AMENDED) ~~A~~ The method as claimed in claim ~~16~~ 13, further comprising: ~~wherein the signals on the input buses and~~

precharging a pair of differential line on each of the output buses to a mid-swing; and ~~are driven~~

driving the differential lines by push-pull driver circuits in response to the intermediate signals, ~~each of which~~

~~drives a pair of differential lines,~~ one line driven high while the other line is pulled low.

18. (CURRENTLY AMENDED) ~~A~~ The method as claimed in claim 13, further comprising:

amplifying the low swing signals on the output buses ~~in amplifiers, the amplifiers being~~ using clocked regenerative ~~amplifiers~~ amplification having a gain using positive feedback.

19. (CURRENTLY AMENDED) ~~A~~ The method as claimed in claim ~~18~~ 13, wherein the signals on the input buses and the low swing signals on the output buses are differential signals.

20. (CURRENTLY AMENDED) A method of connecting signals from a plurality of input buses to a plurality of output buses comprising:

driving signals on the input buses at both edges of a first clock signal through a ~~plurality of~~ low swing ~~drivers, each low swing driver driving~~ on a pair of differential lines, one line driven high while the other line is pulled low;

at a plurality of crosspoints, (i) sensing the signals from the input buses ~~with amplifiers which amplify signals on the input buses,~~ and (ii) driving low swing signals on the output buses

~~with low swing drivers~~ in response to both the signals and a second clock signal; and

sensing the low swing signals on the output buses in response to a third clock signal ~~with output amplifiers~~.

21. (CURRENTLY AMENDED) A crosspoint switch comprising:

means for driving a plurality of low swing signals on a plurality of input buses;

means for shorting together two lines in each of a plurality of output buses to precharge the lines to a mid-swing voltage; and

a plurality of crosspoint means for ~~sensing and amplifying and~~ (i) amplifying the low swing signals from the input buses and (ii) driving the low swing signals on ~~a plurality of~~ the output buses by pulling up one of the lines and pulling down the other line.

22. (CURRENTLY AMENDED) ~~A~~ The crosspoint switch as claimed in claim 1, wherein the input buses and the output buses are differential data lines, and further comprising a plurality of data-line-to-data-line precharge circuits that share charge between the differential data lines to a midpoint of voltage swing on the differential data lines.

23. (CURRENTLY AMENDED) ~~A~~ The method as claimed in claim ~~13~~ 20, wherein the input buses and the output buses are differential data lines, and further comprising precharging the differential buses through a data-line-to-data-line precharge circuit that shares charge between the differential data lines to a midpoint of voltage swing on the differential data lines.